Division of Aquatic Resources
Department of Land and Natural Resources
State of Hawai'i

"Fish for the Future"

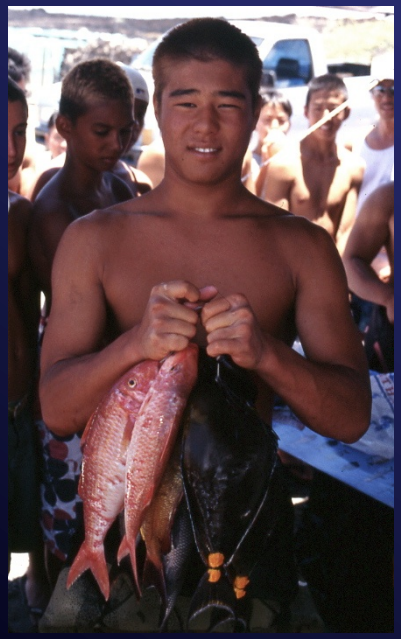
The mission of the Division of Aquatic Resources is to manage, conserve and restore the state's unique aquatic resources and ecosystems for present and future generations.

Updating Hawai'i's Marine Fishing Regulations

→Minimum size limits←

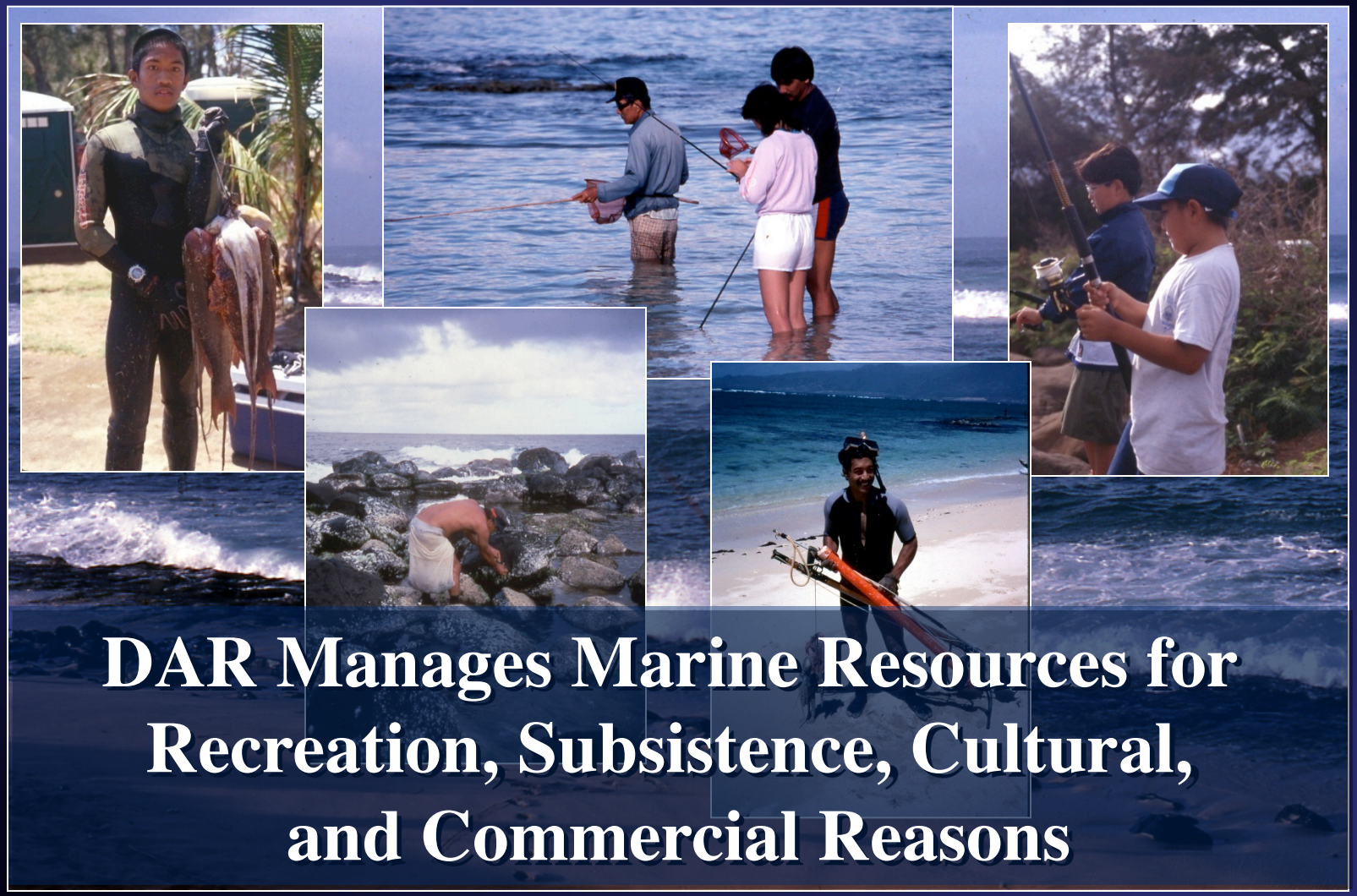
DAR needs your kōkua in helping to update Hawai'i's fishing regulations.

Specifically we need your input on:



- The best way to manage priority marine species and other species of concern
- Plans to establish minimum size regulations on targeted resource fishes
- Suggestions for using other management tools (bag limits, seasons, etc) for specific marine species
- Comments on resource allocation between various users especially commercial vs. noncommercial
- Any other comments or suggestions related to better managing our nearshore marine resources

Our Marine Resources are Important



DAR Manages Marine Resources for Recreation, Subsistence, Cultural, and Commercial Reasons

Department of Land and Natural Resources Policy for Commercial Activities on State Owned and Managed Lands and Waters

The Board approved the following policy on 1/30/98.

The Department, when considering commercial activity proposals or management actions on state owned lands and waters, will use the following hierarchy of priorities:

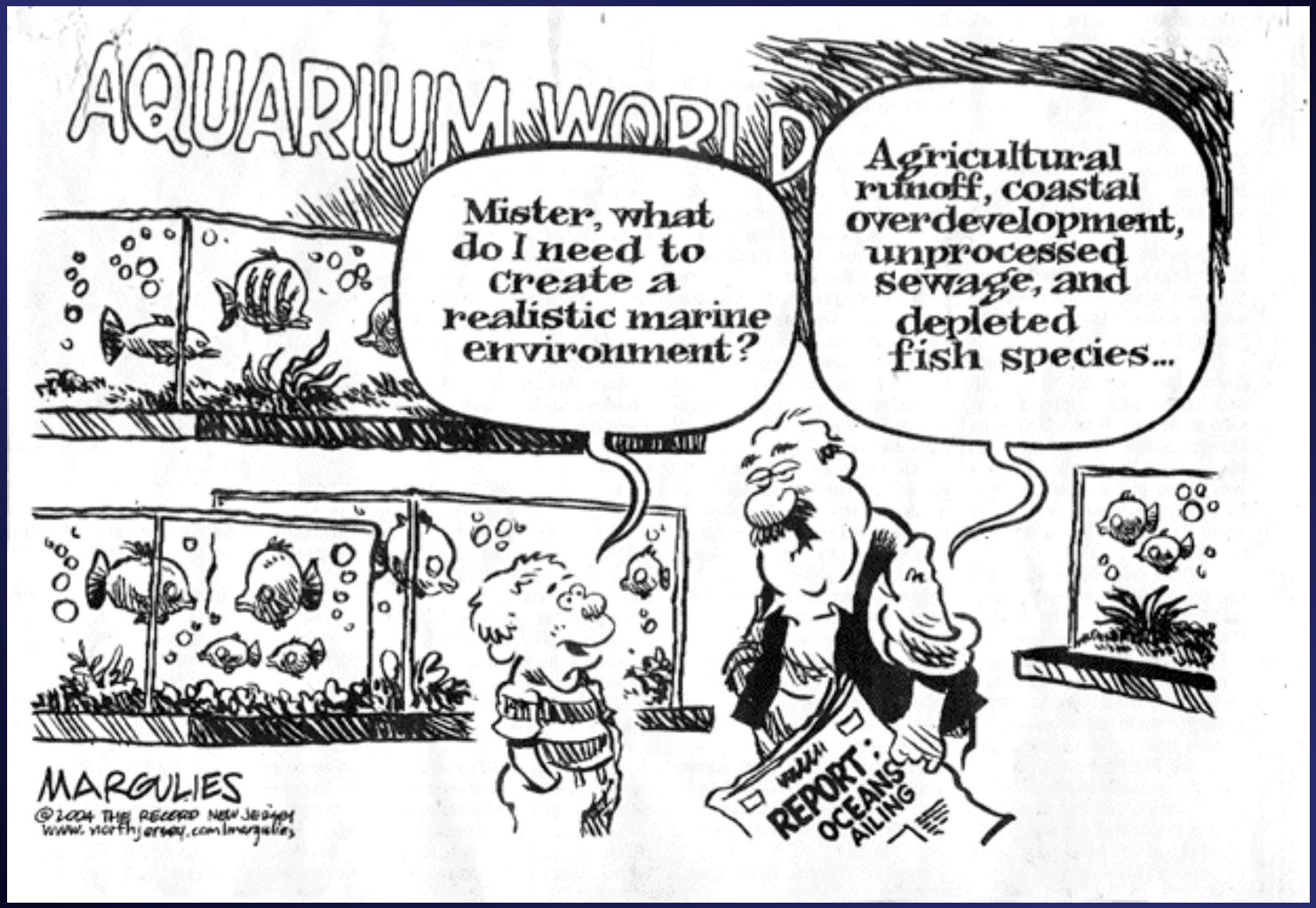
- **The Natural or Cultural Resources** – The highest priority should go to the conservation of the resource. Only if an activity can be done in a way that does not unduly damage the resource, should it be allowed.

- **The General Public** – If use or activity by the public can be done without undue damage to the resource, it should be the next priority.

- **Commercial Activities** – Commercial activities should be considered only if their impacts do not impinge on the resource…or use by the general public.


Stream diversion
Sedimentation
Dredging
Runoff
Invasive species
Sewage
Chemical Pollution
Draining wetlands
Nutrification
Blasting
Introductions
Shoreline hardening
Land fills
Beach creation
Habitat degradation
Loss of ponds
Stream channelization

Declining Resources Have Many Causes!



There is Plenty of Blame to Go Around!

Excessive Fishing Pressure is One Concern!

DAR does not have jurisdiction over the various land issues, but *is* directly responsible for managing fishing related impacts.

Historical References to Declining Fisheries

1902 - Jordan and Evermann note that the fisheries of Honolulu were falling rapidly due to localized over-fishing.

1923 -Titcomb (1972) relates that one Hawaiian wrote to the Hawaiian newspaper *Ka Nūpepa Kuokoa* inquiring "why there was so much fish in the days of our ancestors and so little in our time…?

1925 - Responding to concerns over the high cost of fish in the markets, Hercules Kelly, Territorial Fish and Game Commissioner notes that wasteful methods, destructive fishing techniques, pollution and over-fishing had reduced the abundance of fish in Hawai`i's waters.

1927 – Jordan et al. reported that the fish fauna of Hawaiian reefs was much less abundant than several decades earlier and many common species were now rare.

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DLNR Resource Mangers have had Concerns for Many Years!

Underwater surveys of fishing areas and examination of commercial fish catch reports have disclosed that the more desirable game and food fishes in the shallow inshore areas are on a declining trend and have deteriorated to such an extent that the need for sound conservation measures is urgent.

Division of Fish & Game
Annual Report of the Board of Agriculture and Forestry, Territory of Hawaii
FY July 1,**1955** – June 30,**1956**

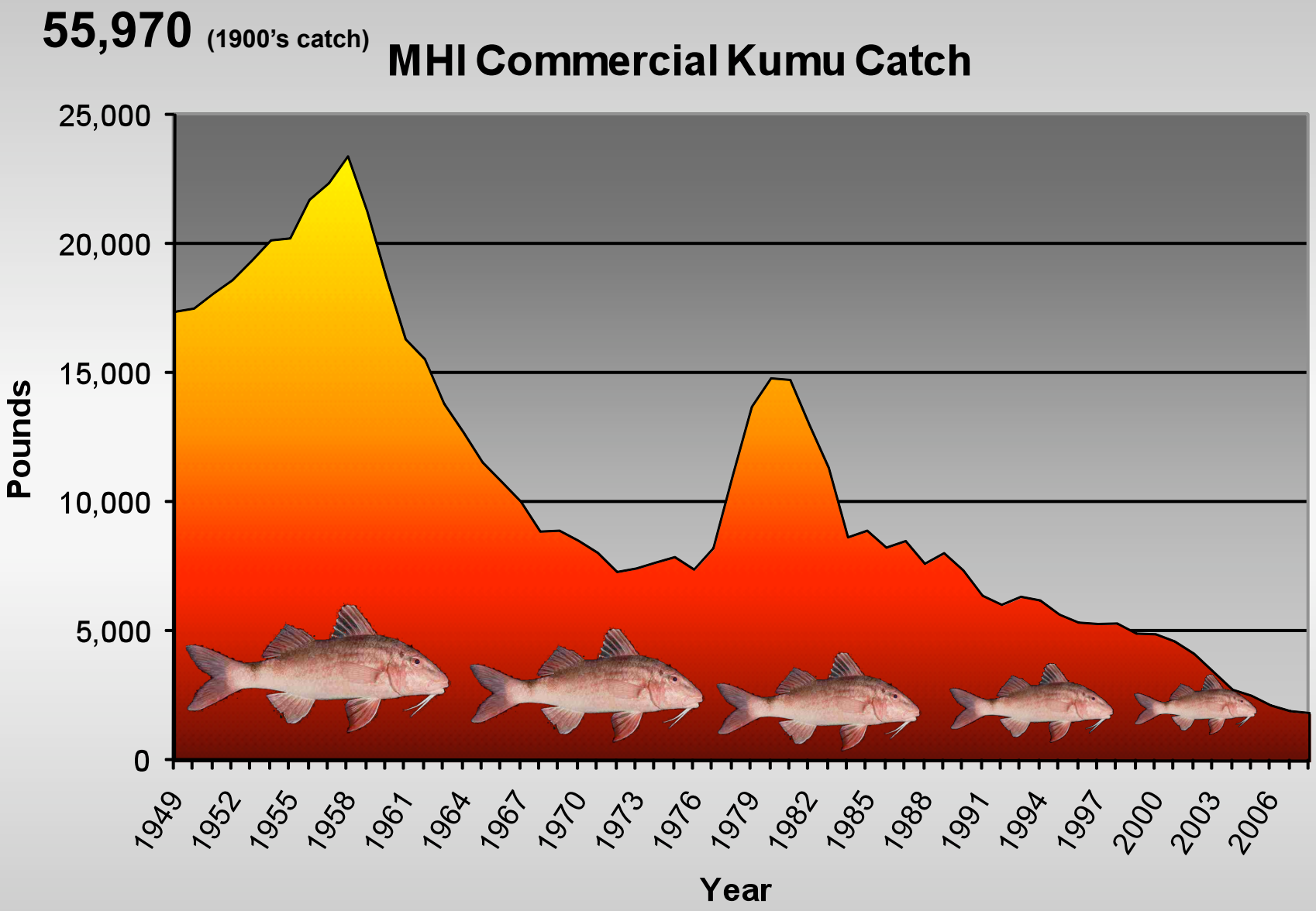
One approach is to improve our existing fish fauna through sound management measures based on research,

and the other is to augment our present fish fauna by introducing exotic game and food fishes for which ecological niches exist in Hawaii, especially from the Central and Western Pacific.

Division of Fish & Game
Annual Report of the Board of Agriculture and Forestry, Territory of Hawaii
FY July 1,**1955** – June 30,**1956**

Some Evidence Regarding Declining Marine Resources Comes from Commercial Catch Reports

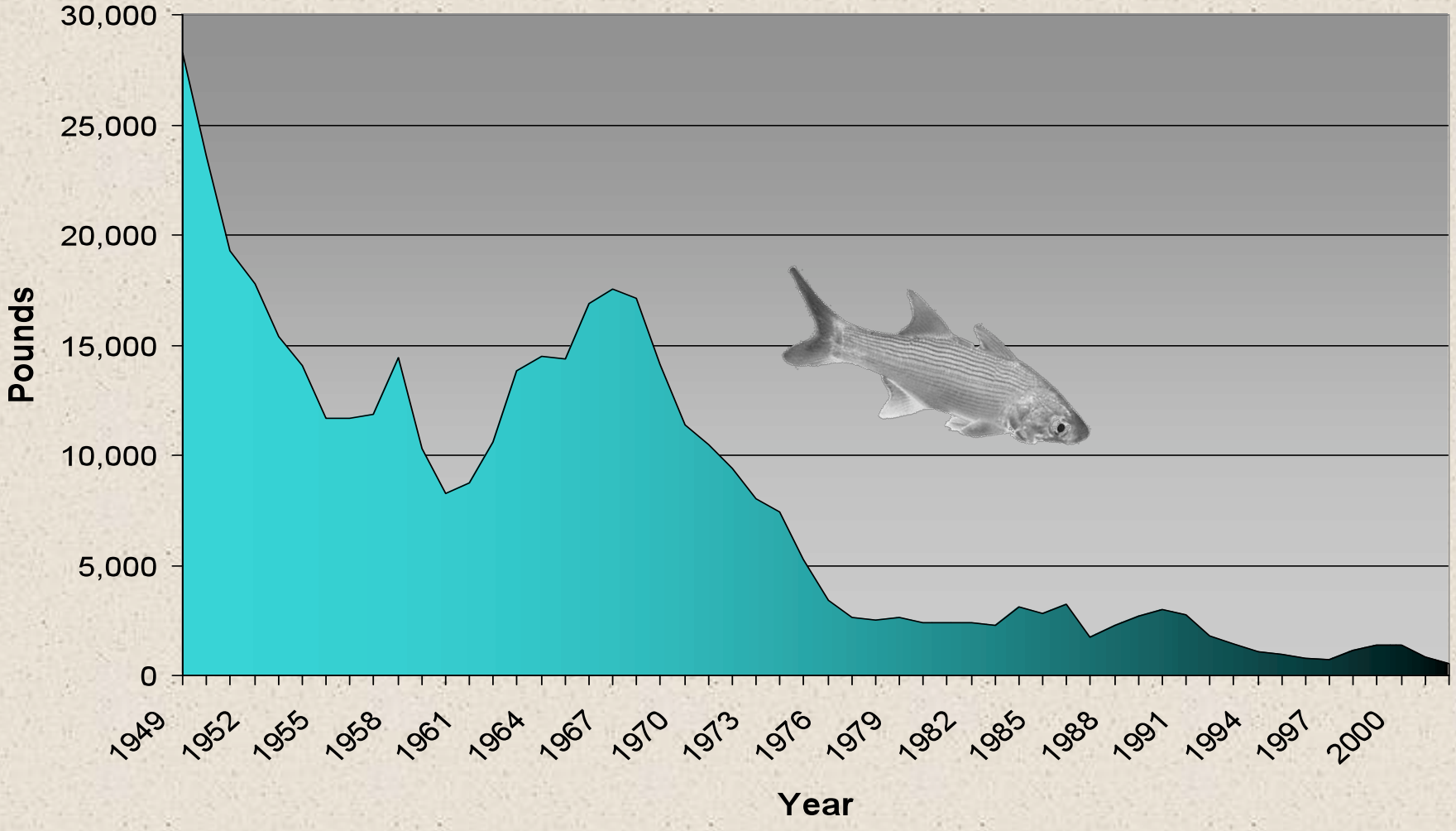
55,970 (1900's catch)



MHI Commercial Moi Catch

1949-2002

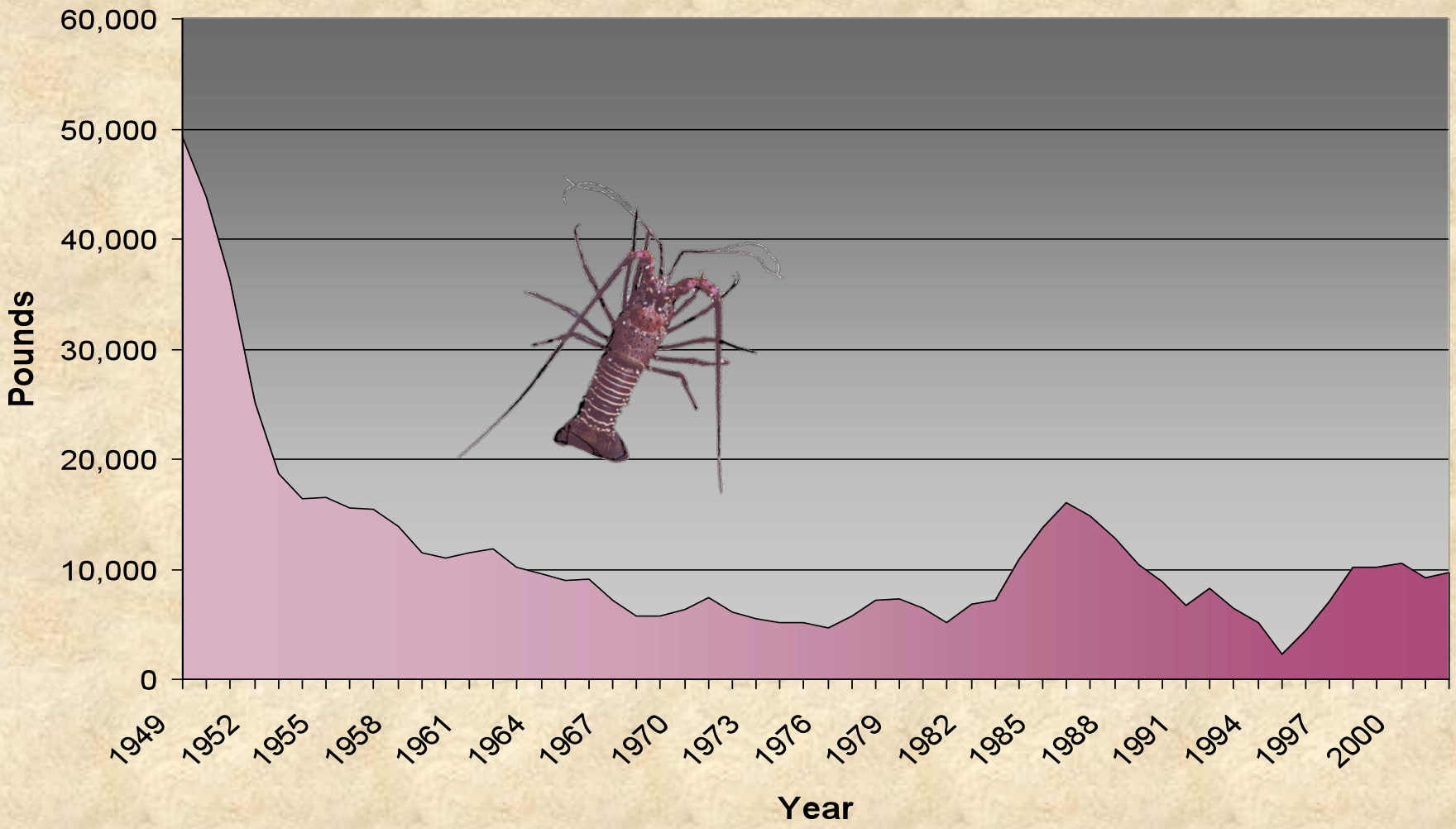
33,519



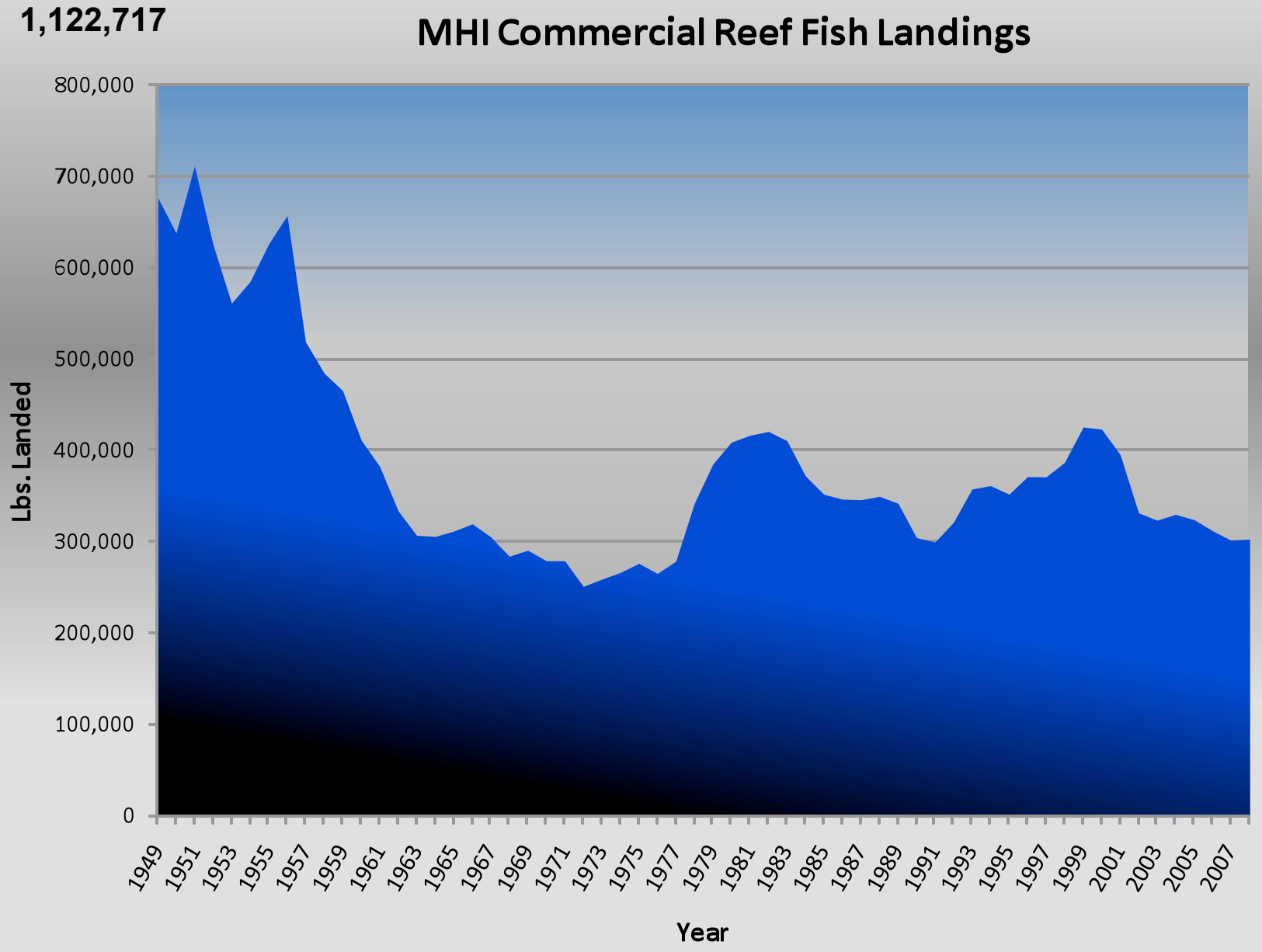
131,182

MHI Commercial Lobster Catch

1949-2002



1,122,717


MHI Commercial Reef Fish Landings
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Lbs. Landed
1949
1951
1953
1955
1957
1959
1961
1963
1965
1967
1969
1971
1973
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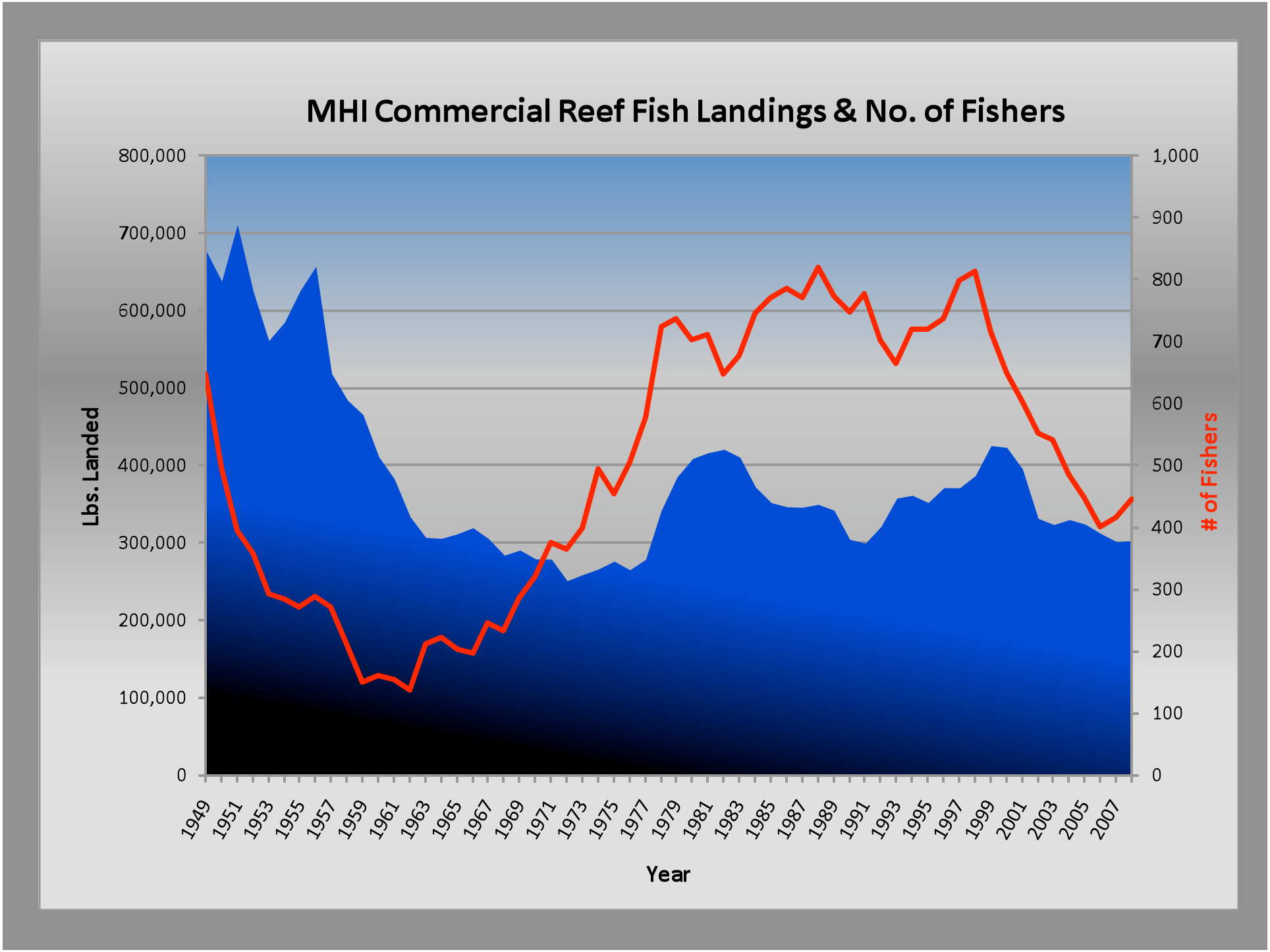
2005
2007
Year


MHI Commercial Reef Fish Landings & No. of Fishers
Lbs. Landed
# of Fishers
Year
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
1,000
900
800
700
600
500
400
300
200
100
0
1949
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1965
1967
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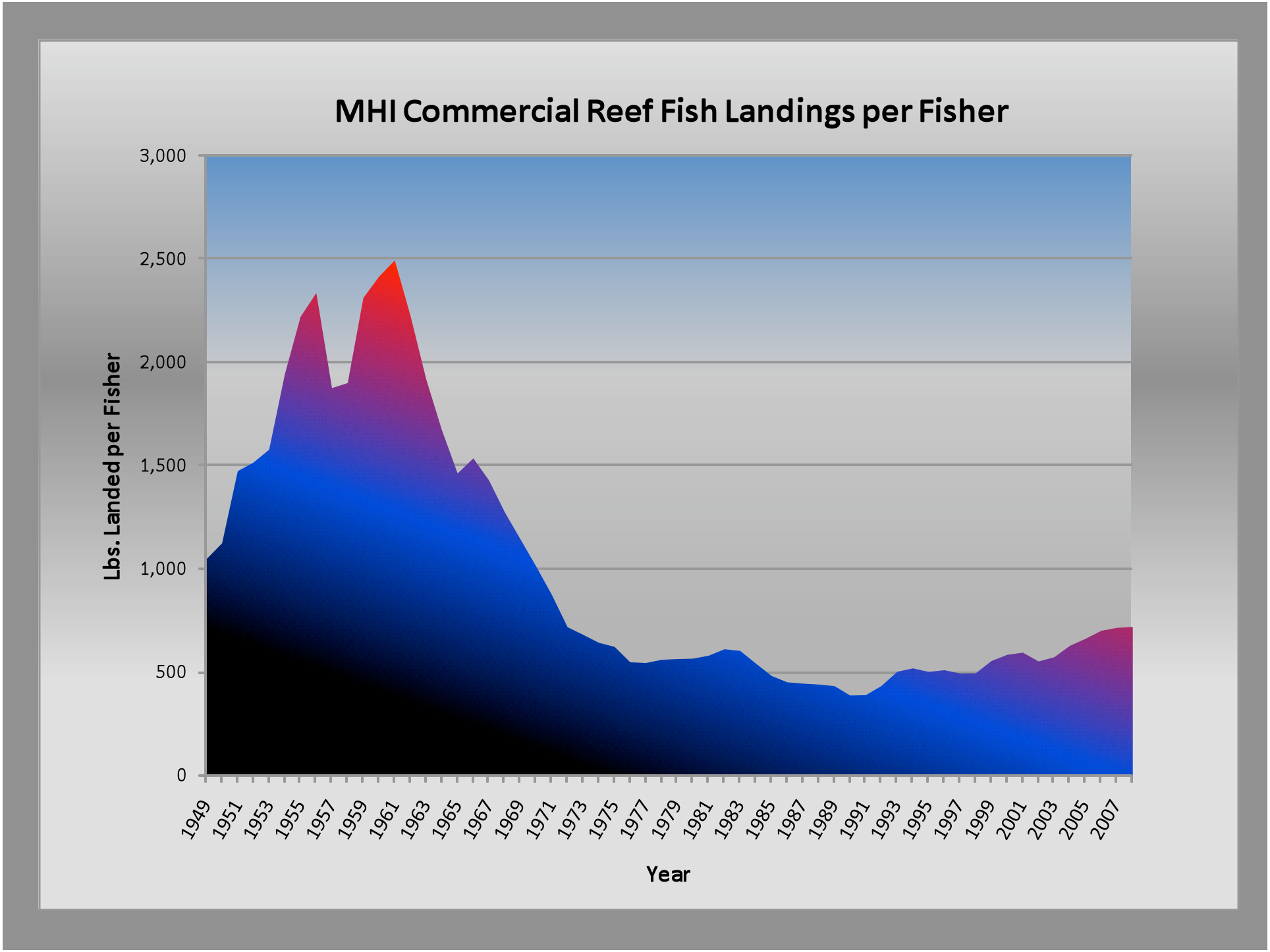
MHI Commercial Reef Fish Landings per Fisher
Lbs. Landed per Fisher
3,000
2,500
2,000
1,500
1,000
500
0
1949
1951
1953
1955
1957
1959
1961
1963
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1967
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1971
1973
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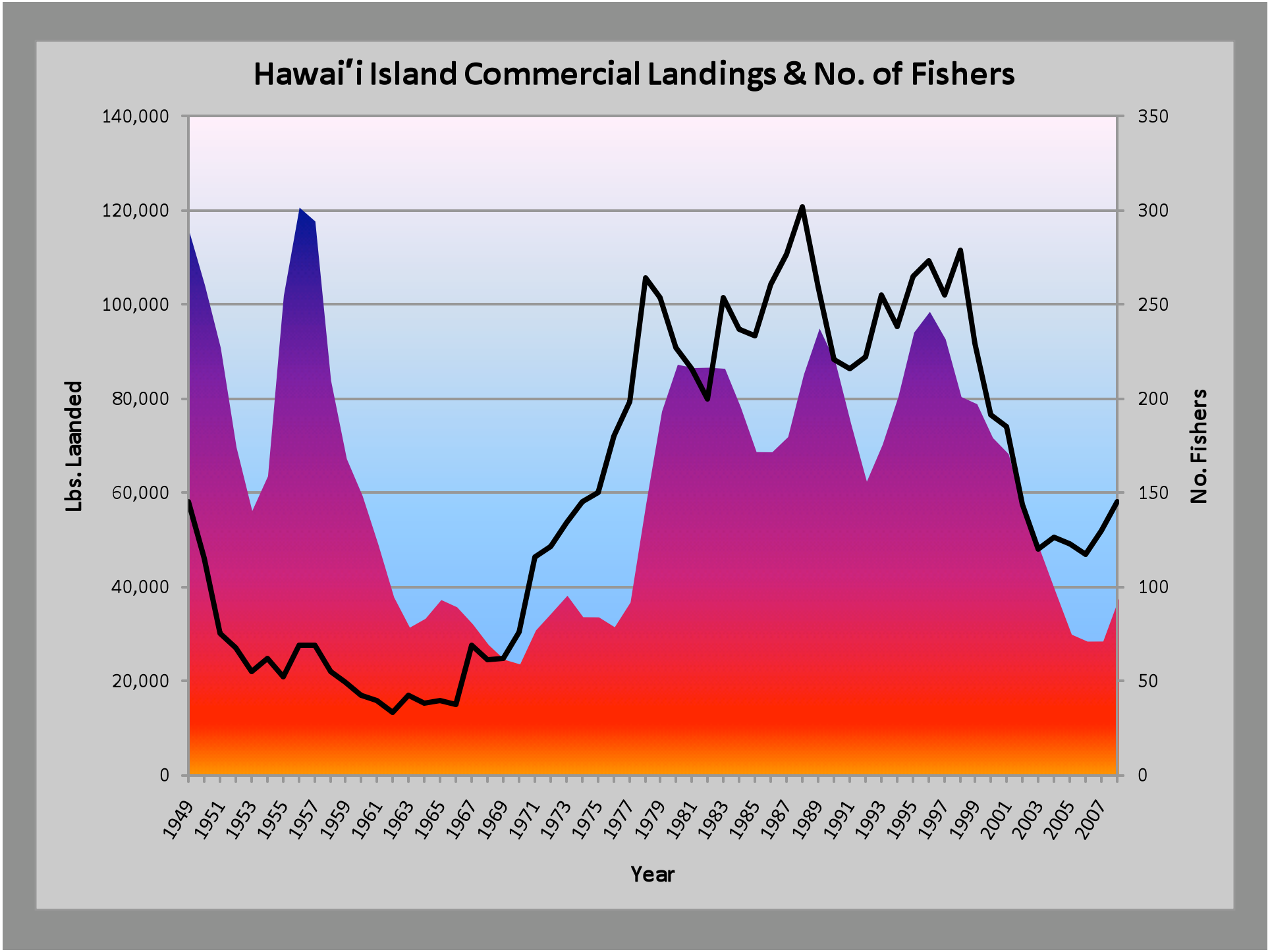
2005
2007
Year


Hawai'i Island Commercial Landings & No. of Fishers
Lbs. Laanded
No. Fishers
Year
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
350
300
250
200
150
100
50
0
1949
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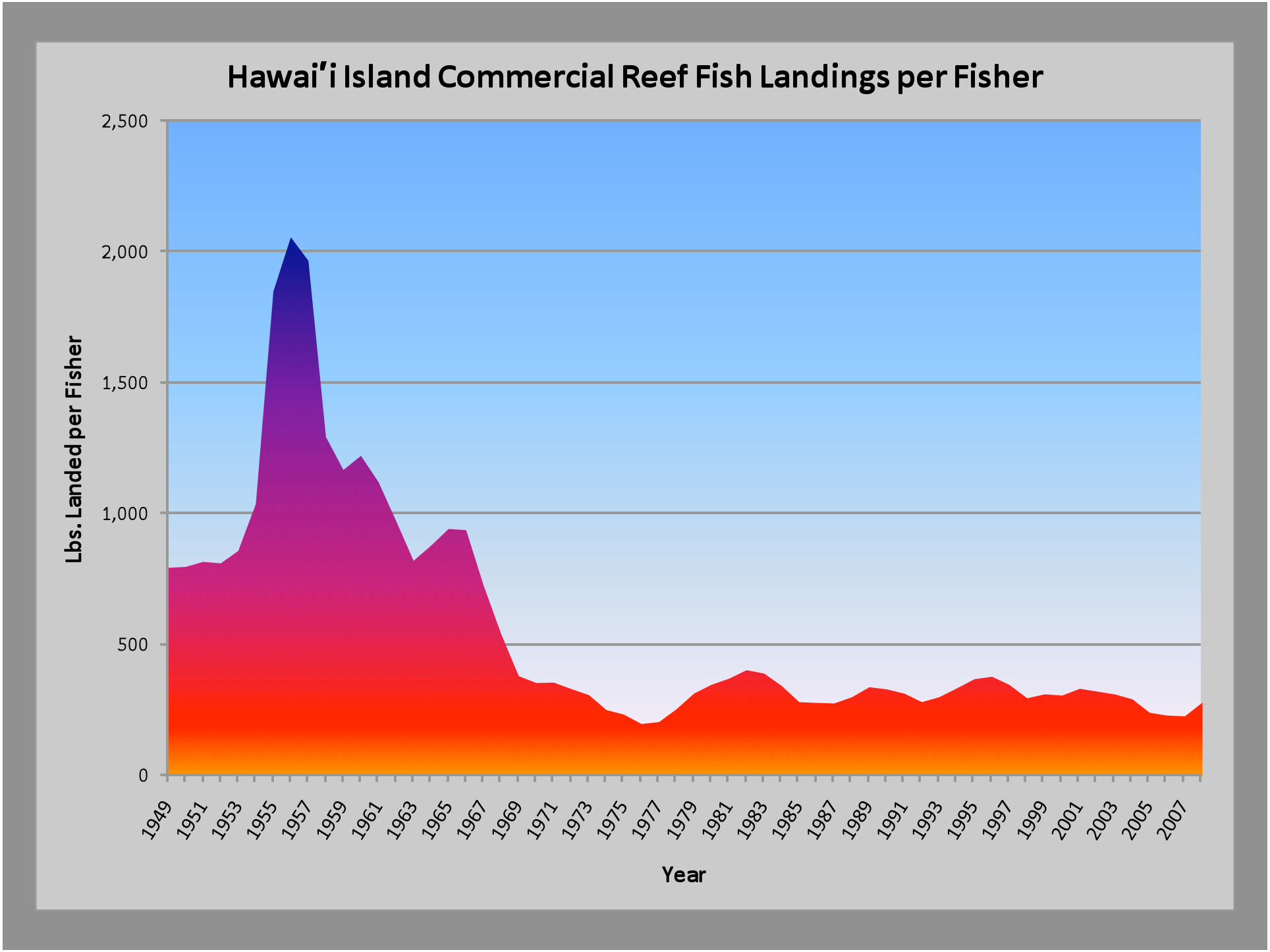
2007


Hawai'i Island Commercial Reef Fish Landings per Fisher
Lbs. Landed per Fisher
2,500
2,000
1,500
1,000
500
0
1949
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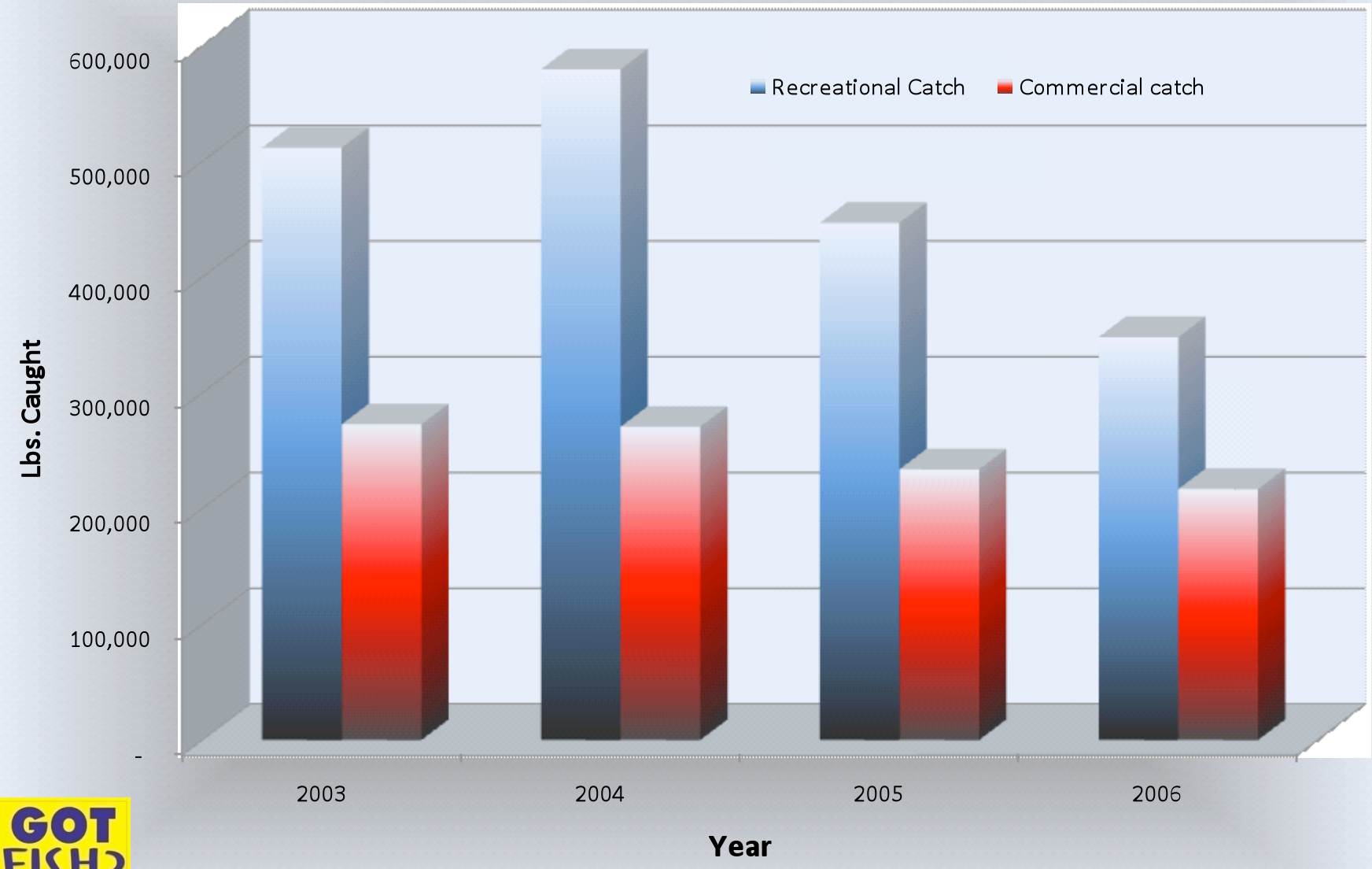
2007
Year

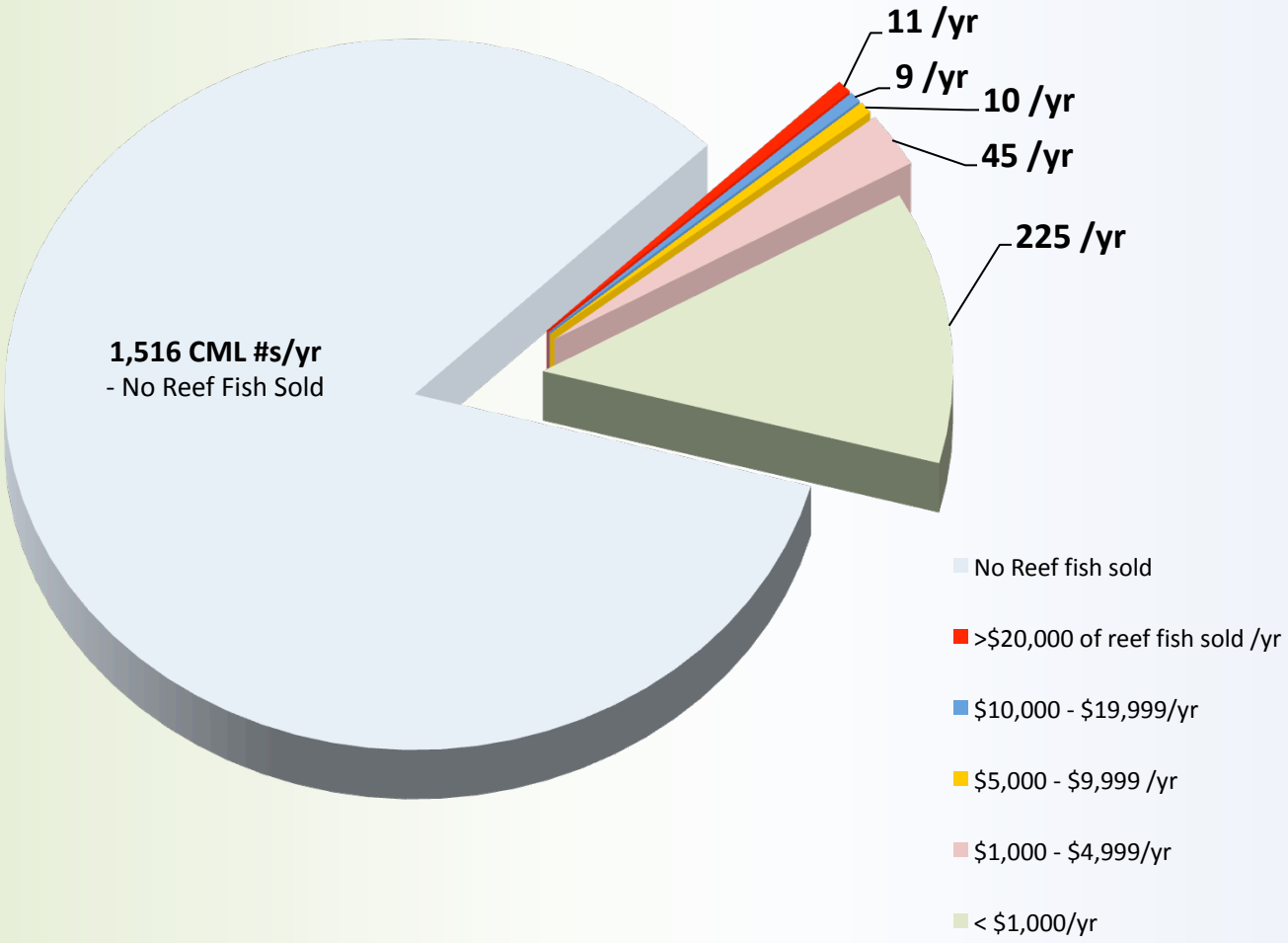
Commercial & Recreational Reef Fish Catch



GOT FISH?
Hawaii Marine Recreational Fishing Survey

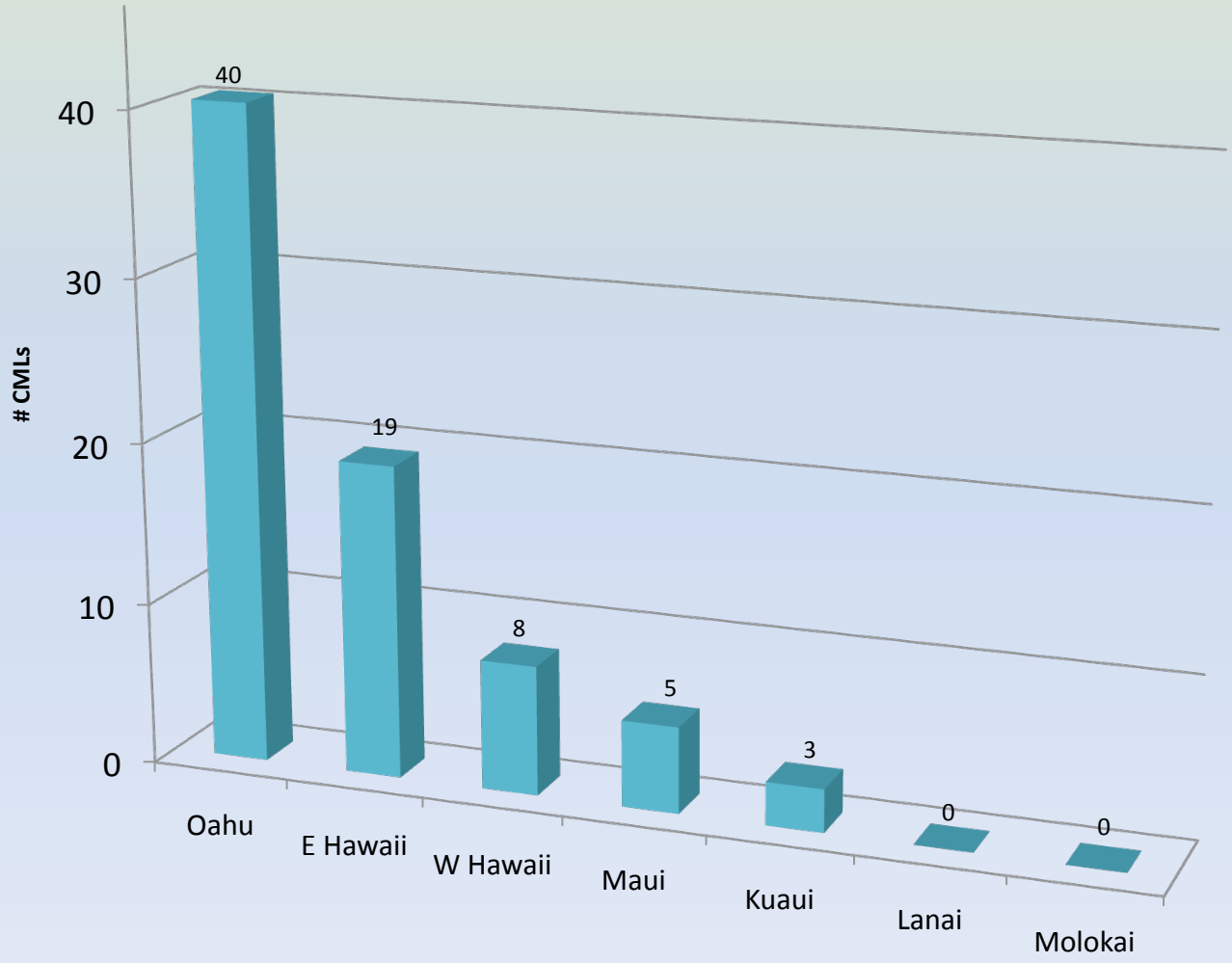
Source: Hawaii Marine Recreational Fishing Survey

Reef Fish Sales for CML Holders



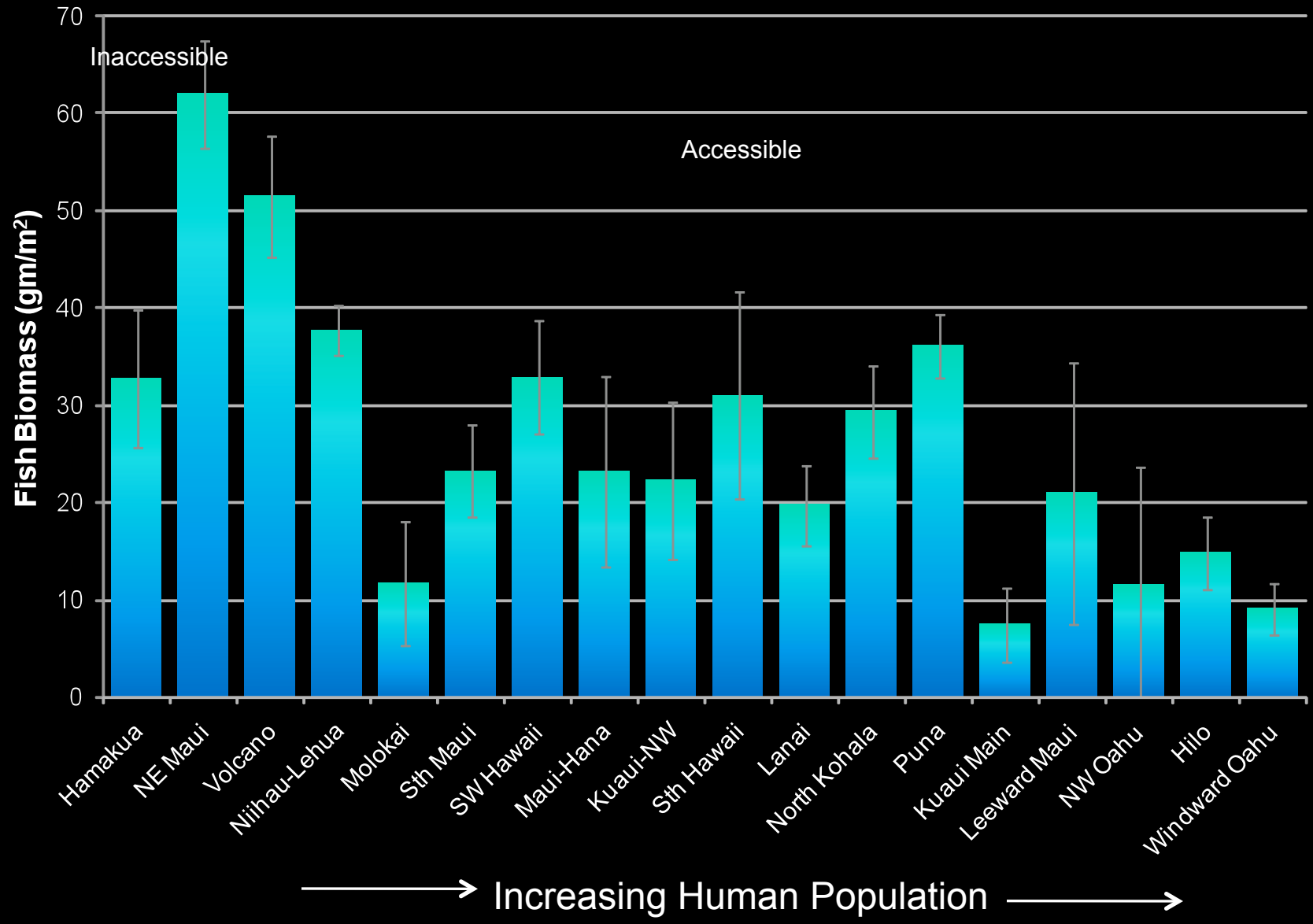
CMLs with reef fish sales >$1,000 per island

Ex-vessel value. Averages FY 2006-08



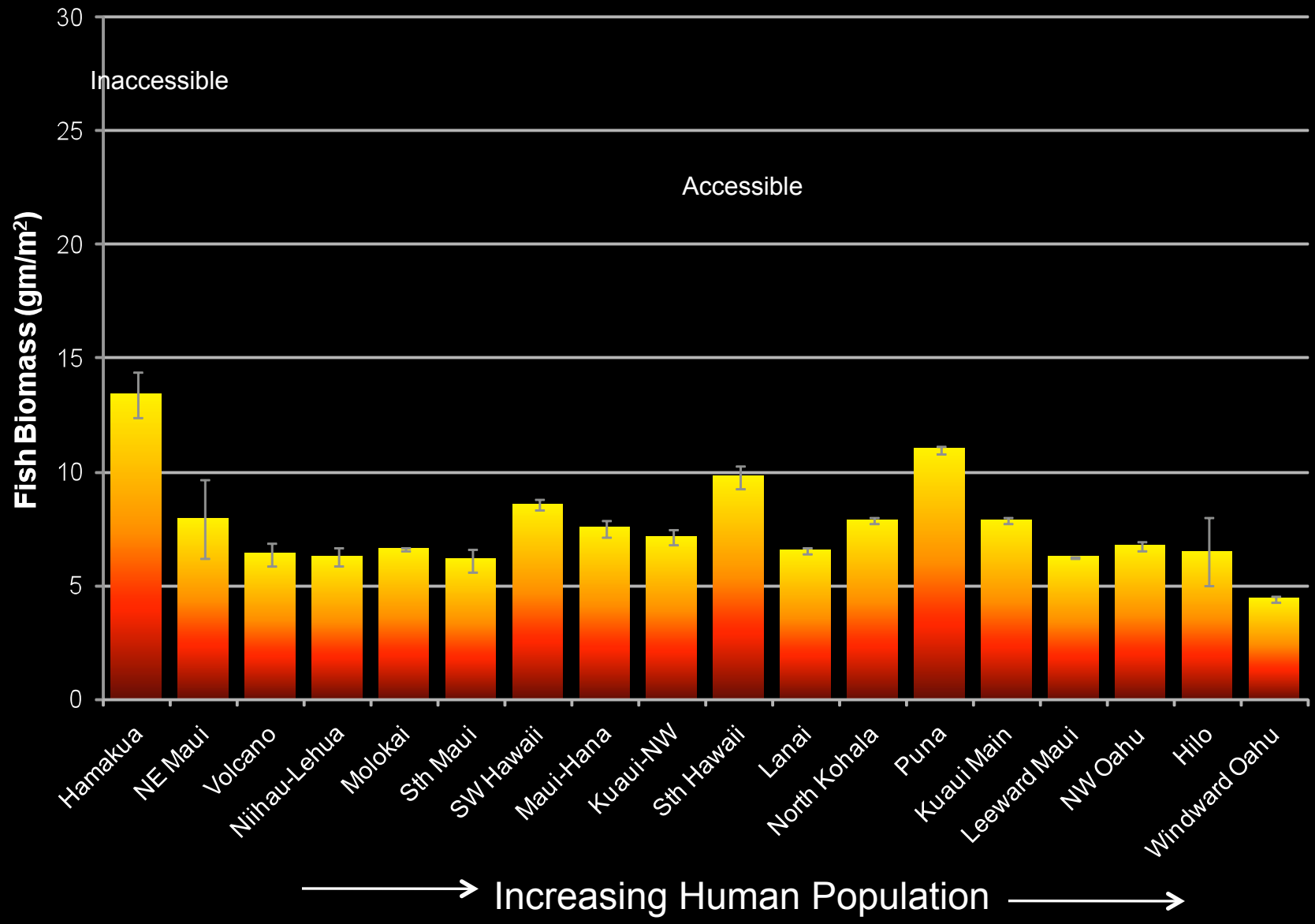
Some Evidence Comes from Underwater Visual Census Data "Fish Counts"

Resource Fish Biomass & Increasing Human Population & Accessibility



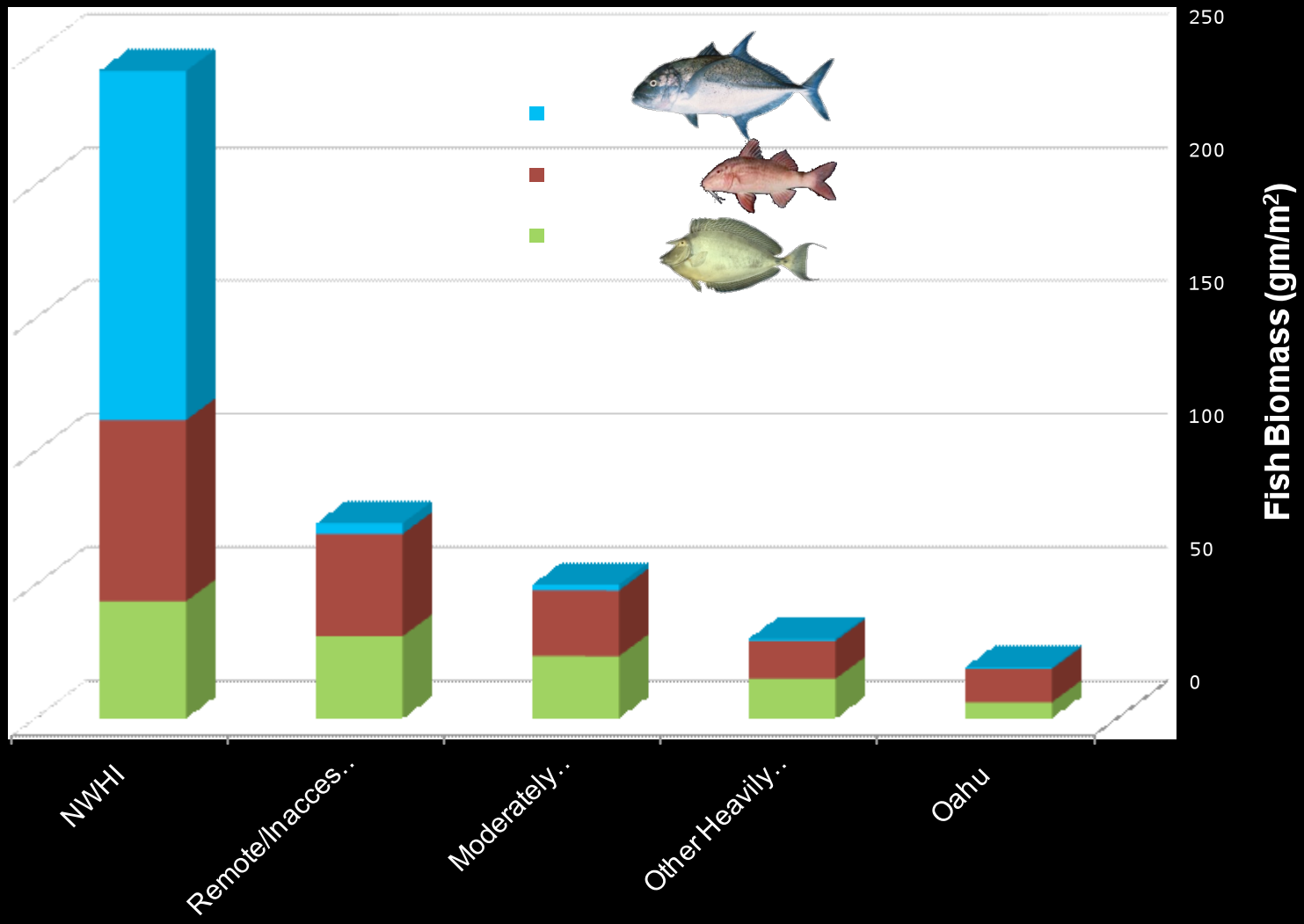
Williams, Walsh et al. 2008

Non-Resource Fish Biomass & Increasing Human Population & Accessibility



Williams, Walsh et al. 2008

Comparison of Hawaiian islands Reef Fish Assemblages



Friedlander and DeMartini 2002

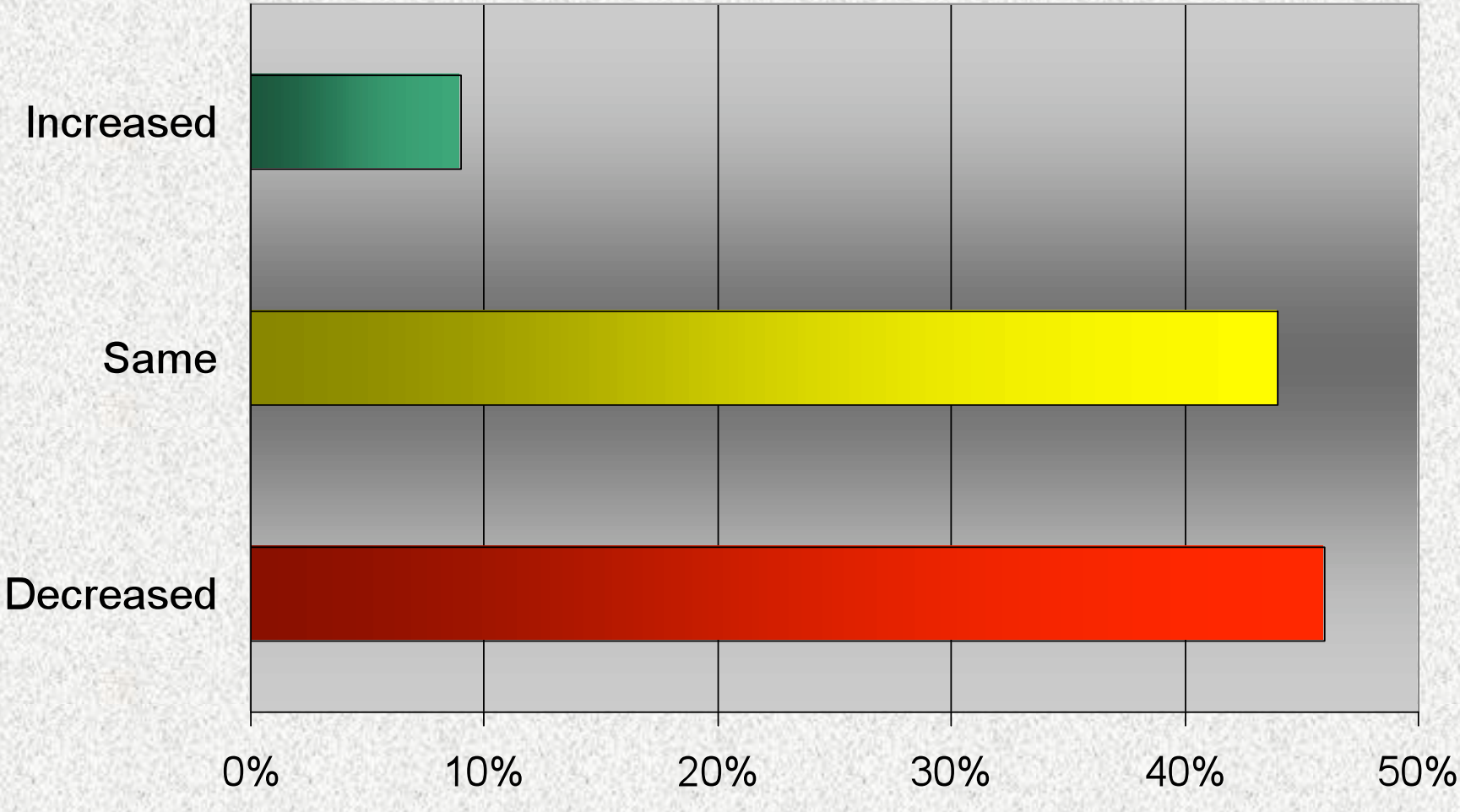
Many Fishers Have Similar Concerns!

1987 Hawaii Commercial Fishing Survey

DAR/DLNR

2,529 mailings 780 responses

Compared to five years ago, has the average size of the fish you caught in the last year…



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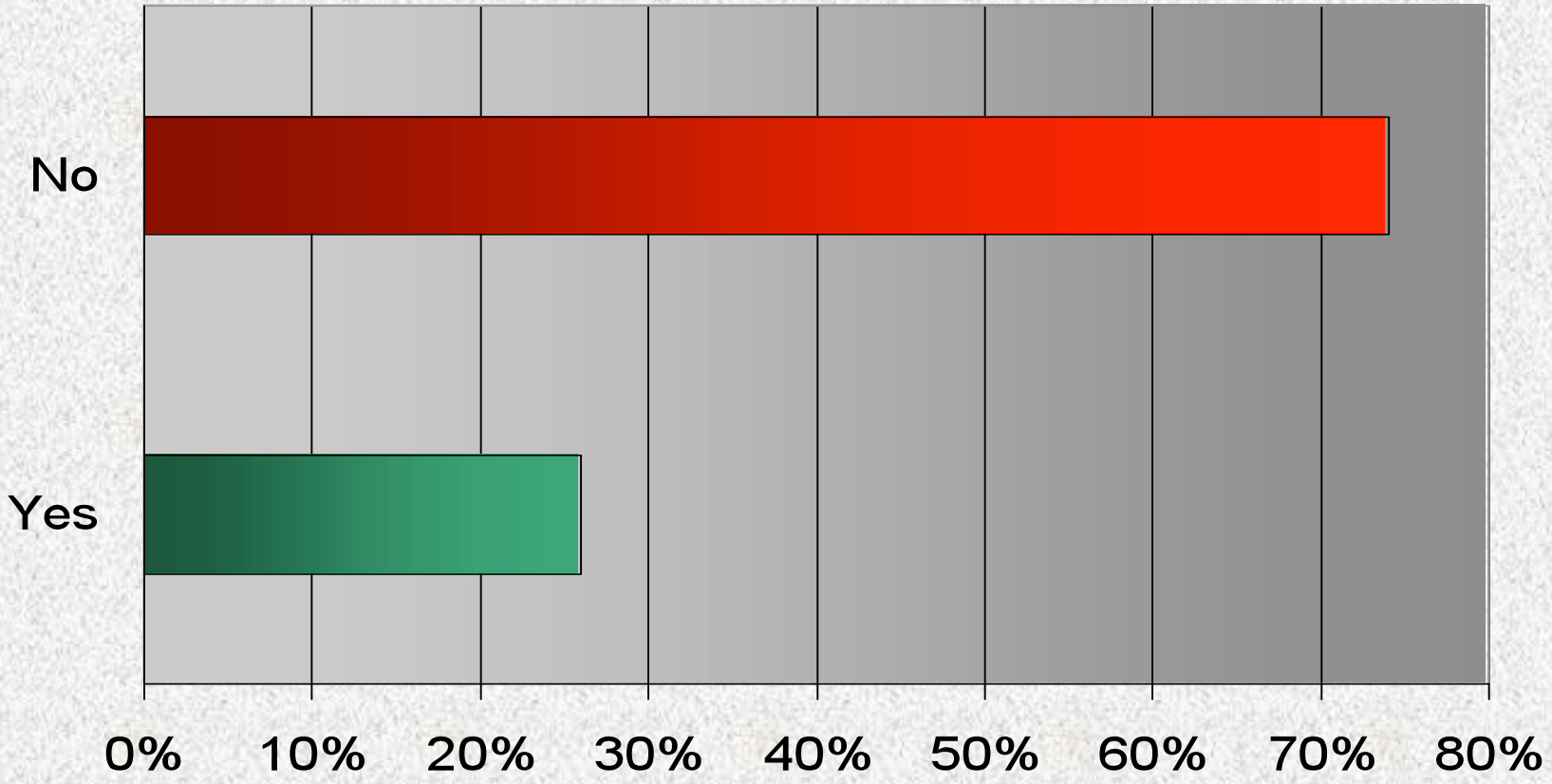
Is commercial fishing generally good now?



1987 Hawaii Commercial Fishing Survey

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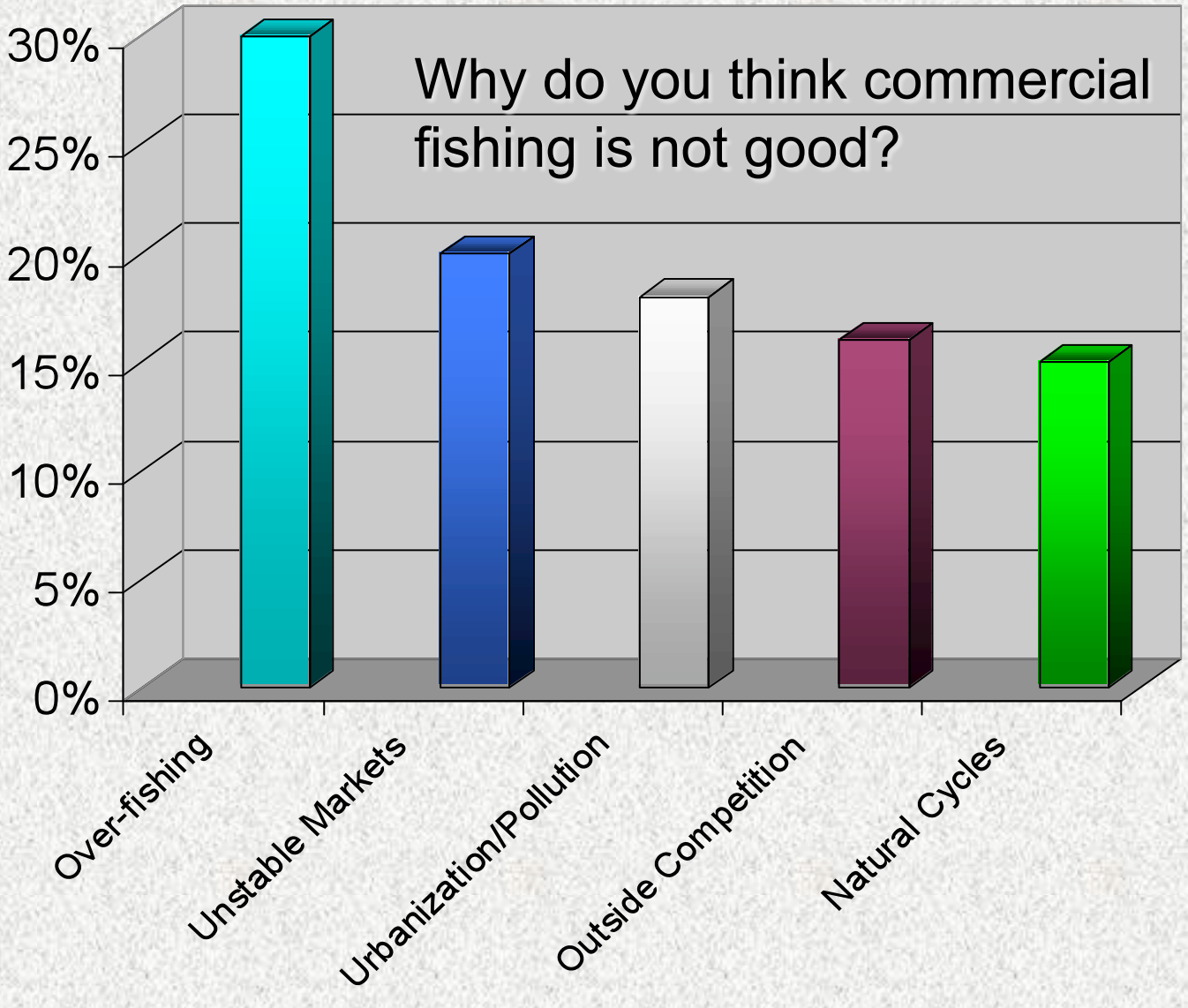
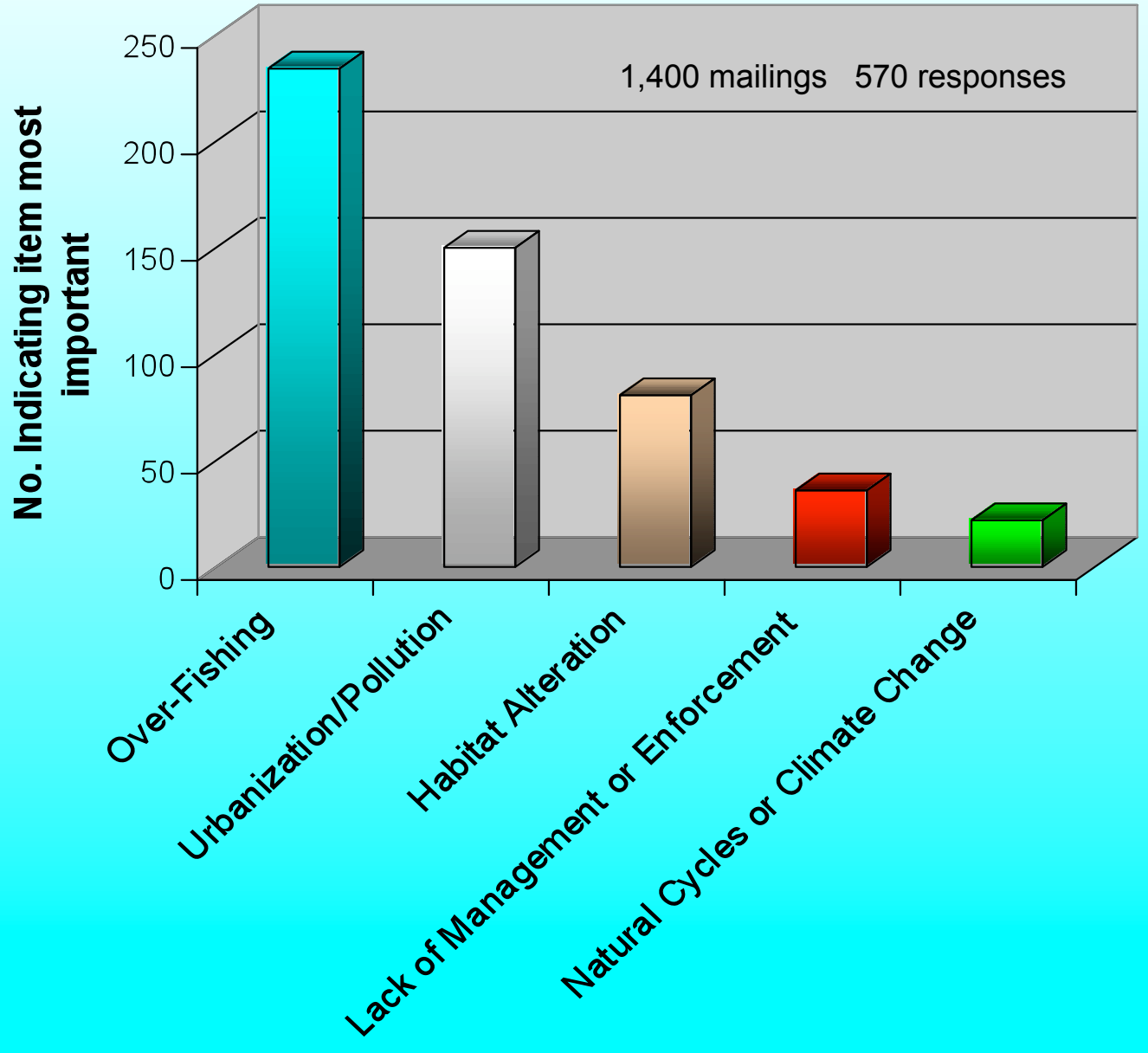


1988 DAR/DLNR Ocean User Survey



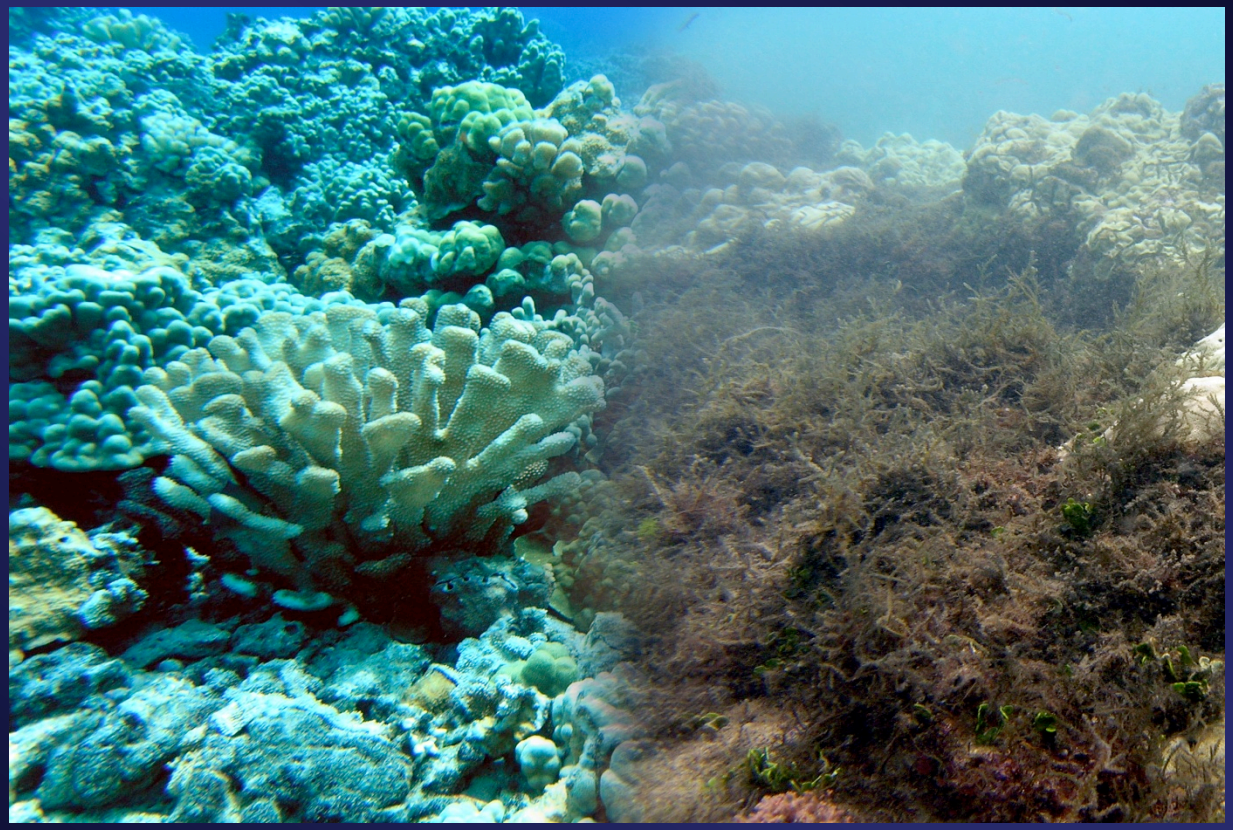
DAR/DLNR Fishing Survey
1998

Conducted of 863 fishers on Oahu (87%), Maui and Hawai`i

	YES	NO	nc
Would you like to see more enforcement?	**73%**	16%	11%
Would you like to see more FMAs?	**67%**	23%	10%
Would you like to see more MLCDs?	**44%**	43%	13%
Do you favor a marine recreational fishing license?	**50%**	42%	8%
Should gill nets be restricted or banned?	**80%**	20%	0%

20% of all fishers felt inshore fisheries were *terrible*
37% felt the fisheries were *poor*
34% felt the fisheries were *fair*
8% felt the fisheries were *good*
1% felt the fisheries were *excellent*

Other Reasons to Better Manage Near-shore Resources

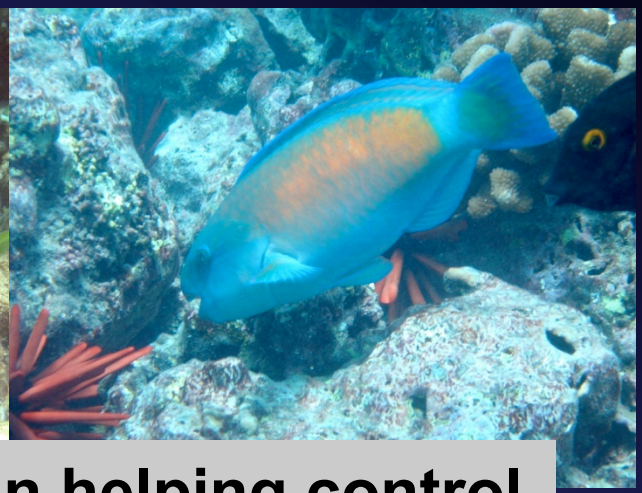


Ecosystem Services!

The role certain species play in helping maintain healthy marine ecosystems.

Examples
Ecosystem Services





Herbivorous Fish Play a critical role in helping control algae growth and maintaining healthy coral reefs.


Baitfish are an important food sources For many nearshore predators!

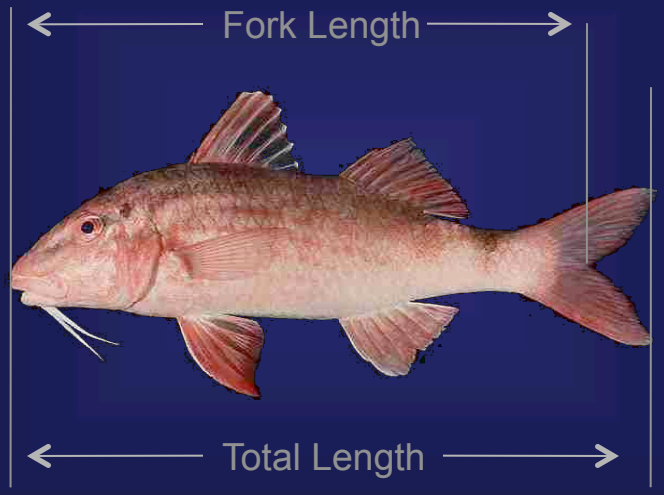
What Management Tools Are Available to DAR?

- Minimum Sizes
- Bag Limits
- Closed Seasons
- Marine Protected Areas
- Gear Restrictions
- Habitat Protection (corals & live rock)
- Fully Protected Species

Minimum Sizes

Size Regulations Based on

L_{50}



The Length at Which Half of the Individuals in a Species Become Reproductively Mature

Science Based & Widely Understood

Concerns with Minimum Sizes

Minimum size rules may shift fishing effort onto Larger fish!


SO BIG
5/17/97
108 lbs
BIG
is
Beautiful

Size Does Matter!

What Management Tools Should DAR Use?

- DAR would like to use minimum size as a standard for most targeted species.

- Biological and social considerations may make minimum size rules inappropriate for all species.

- Effective management may require a combination of minimum size rules and other management tools.

- Good resource management requires public support and compliance! What type of rules will you support?

Parrotfishes

Spectacled or *uliuli*

Redlip or *palukaluka*

Bullet head

Star eye or *ponuhunuhu*

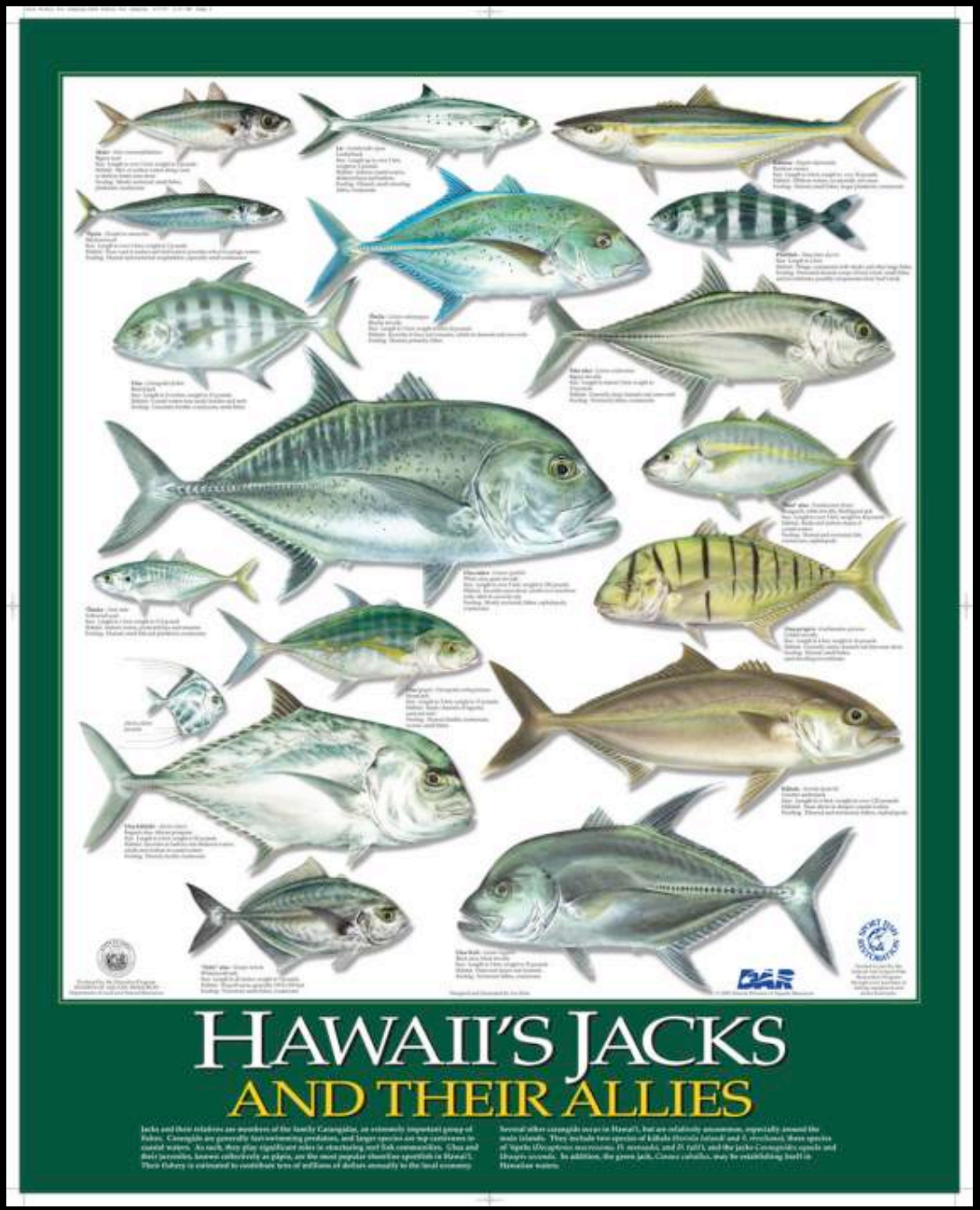
Regal or *lauia*

Yellowbar or *panunu*

Palenose

Photos: J Randall


Malu
© Keoki Stender
Weke nono
Moelua
weke 'ula
© Keoki Stender
Moano kali
Moano
Kūmū
Munu
weke
© Keoki Stender
Pueo
Striped
Goatfish
Photos: J Randall & K. Stender



Jacks

Includes ulua, akule, opelu & Rainbow runner,

Division of Aquatic Resources
Department of Land and Natural Resources
State of Hawai'i

"Fish for the Future"

Working together

We can create fishing rules that are:

- Based on good science
- Proactive against over-fishing
- User friendly for the fishing public

Please return to: DAR 74-380 B Kealakehe Pkwy, Kailua Kona, HI 96740

Public questionnaire on potential fishing regulations for West Hawai'i

1) Should L_{50} be the basic standard for minimum size regulations of reef fishes?
Yes
No

2) Are there some species which should *not* utilize L_{50} as the minimum size?
Yes Which ones?
No

3) Beyond the three families of priority species, are there other reef species that should have minimum size regulations?
Yes Which ones?
No

4) Should minimum size (and other) regulations be the same for Recreational and Commercial fishermen?
Yes
No

5) Should the sale of reef species be prohibited and only taken for personal consumption?
Yes
No

6) Should there be maximum size regulations (or slot limits) for fish in addition to minimum size regulations?
Yes
No

7) Should there be bag limits for reef fishes?
Yes Which ones?
No

8) Should the following rules apply to blue/green male parrot fish:
Kapu (no take)
Size limits
Bag limits
Both size & bag limits

9) Should additional No-Take Marine Protected Areas be established in West Hawai'i?
Yes
No

10) Should DAR focus only on minimum sizes at this time or should they also consider other management tools as noted above?
Just minimum sizes
Other management tools (please list)

Please write any additional comments below.

Contact Information

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Honokohau Marina
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Kailua-Kona, HI 96740
327-6226
darkona@hawaiiantel.net